

**SUBSTITUTE SPECIFICATION – Clean Copy**

**Connector Seal Comprising Ratchet Teeth**

**Cross Reference to Related Applications**

[0001] This application is a national stage application of International Application No. PCT/EP2004/007231, filed July 2, 2004.

**Background of the Invention**

**Field of the Invention**

[0002] The invention relates to a connector seal device, for a branch pipe in combination with a transverse opening, such as can be found in the pierced wall of a main pipe, a shaft, or the like, for which the diameter can fluctuate considerably.

**Related Art**

[0003] A connector seal device of this type is known from reference EP 0 795 712 B1. The sealing effect of this connector seal device is excellent. It is therefore an object of the present invention to provide an alternative, but similarly effective connector seal device, which can be produced cheaply and can be installed quickly.

**Brief Summary of the Invention**

[0004] An elastomer insert in the shape of a hollow plug is provided for a transverse opening of a wall of a main pipe. The insert includes a relatively soft, tubular sealing wall region adapted to fit into the transverse opening. The elastomer insert is provided with a supporting collar, which forms an end stop on the main pipe, around the transverse opening, and is preferably composed of a softer material than the material for the tubular sealing wall region. A pipe union made of a harder material than the elastomer insert can be inserted into the elastomer insert to press the insert with sufficient force against the pipe wall of the transverse opening during the assembly of the connector seal device. The elastomer insert comprises a region with a tapered inside surface provided with locking ring zones. In a similar manner, the pipe union has a tapered region on the outside surface, which is also provided with locking ring zones. The individual locking ring zones have slanted surfaces, inclined in the insertion direction of the parts, so that the slanted surfaces